THE
PRESIDIO TRUST

20 September 2004

Mr. James Ponton
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Technical Report: Emergent Chemical Study, First Quarter 2004
Presidio of San Francisco, California

Dear Mr. Ponton:

The Presidio Trust (Trust) is pleased to provide the Regional Water Quality Control Board (RWQCB) with the document entitled "*Technical Report: Emergent Chemical Study, First Quarter 2004, Presidio of San Francisco*" dated September 2004 (Technical Report). The Technical Report consists of a description of the emergent chemical groundwater sampling program conducted during the First Quarter 2004 at the Presidio of San Francisco, California.

As a bit of background to this issue, by letter to the Trust dated 23 June 2003, the RWQCB requested the Trust to prepare a Source Evaluation Report identifying potential sources of emergent chemicals at all areas of concern, installation restoration sites and operable unit sites within the Presidio of San Francisco. In response to this request, the Trust transmitted a letter report to the RWQCB, entitled *Preliminary Evaluation of Potential Emergent Chemical Use Areas and Locations at the Presidio of San Francisco (Source Evaluation Report),* dated November 25, 2003. The Trust's Source Evaluation Report identified potential source areas for emergent chemical releases and developed a groundwater monitoring plan to address each potential source area at the Presidio. Per the RWQCB's 23 June 2003 letter, emergent chemicals are identified as perchlorate, N-nitrosodimethylamine (NDMA), 1,4-dioxane, 1,2,3-trichloropropane (TCP), hexavalent chromium, and polybrominated diphenyl ether (PBDE).

The attached Technical Report presents the results of implementing our emergent chemical groundwater sampling plan to date. The Technical Report consists of the groundwater sample analytical results and the associated figures and tables, and an evaluation of the data results collected. The purge records and groundwater level measurement logs associated with the First Quarter 2004 emergent chemical sampling event are included as Attachment A and the data validation and laboratory reports and included in a compact disc as Attachments B and C to the Technical Report. Section 5.0 [Conclusions and Recommendations] of the Technical Report

34 Graham Street, Post Office Box 29052, San Francisco, California 94129-0052
415/561-5300 fax 561-5315 presidio@presidiotrust.gov

identifies the Trust's recommendations concerning future evaluations of emergent chemicals at the Presidio.

If you have any questions or concerns regarding the attached Technical Report, please call me at (415) 561-4259.

Sincerely yours,
The Presidio Trust

for

Craig Cooper
Remediation Program Manager

Attachment: *Technical Report: Emergent Chemical Study, First Quarter 2004, Presidio of San Francisco* dated September 2004

Distribution:
Robert Boggs, DTSC
Brian Ullensvang, National Park Service
Doug Kern and Mark Youngkin, Presidio Restoration Advisory Board (RAB)
Jennifer Yata, Presidio Trust

DRAFT
TECHNICAL REPORT: EMERGENT CHEMICAL STUDY
FIRST QUARTER 2004
PRESIDIO OF SAN FRANCISCO, CALIFORNIA

Prepared for:

The Presidio Trust
34 Graham Street, P.O. Box 29052
San Francisco, CA 94129-0052
415/561-5300 Fax 561-5315

Prepared by:

Treadwell & Rollo, Inc.
555 Montgomery Street, suite 1300
San Francisco, Califorina 94111
415/955-9040 Fax 955-9041

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Treadwell & Rollo, Inc.
555 Montgomery Street, Suite 1300
San Francisco, California 94111
415/955-9040 fax 955-9041

September 2004

Dorinda C. Shipman, R.G., C.HG., Treadwell & Rollo, Inc.

20 September 2004
Date

REGISTERED GEOLOGIST
DORINDA SHIPMAN
CH No. 215
CERTIFIED HYDROGEOLOGIST
STATE OF CALIFORNIA

Joshua D. Graber, Treadwell & Rollo, Inc.

20 September 2004
Date

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Attachment A Purge Records and Groundwater Level Measurement Logs (Compact Disc)
Attachment B Data Validation Reports (Compact Disc)
Attachment C Laboratory Analytical Reports (Compact Disc)

1.0 PURPOSE

This *Technical Report: Emergent Chemical Study, First Quarter 2004, Presidio of San Francisco, California* (Technical Report) consists of a description of the emergent chemical groundwater sampling program conducted at the request of the Regional Water Quality Control Board (RWQCB) during the First Quarter 2004 at the Presidio of San Francisco, California. The sampling program was requested by the RWQCB in a letter to the Presidio Trust dated 23 June 2003. The emergent chemical groundwater sampling program was developed to determine if past uses at the Presidio resulted in groundwater contamination associated with emergent chemicals identified as perchlorate, N-nitrosodimethylamine (NDMA), 1,4-dioxane, 1,2,3-trichloropropane (TCP), hexavalent chromium, and polybrominated diphenyl ether (PBDE).

Groundwater sample analytical results and the associated figures and tables, and an evaluation of the data results are also included in this technical report. The purge records and groundwater level measurement logs associated with the First Quarter 2004 emergent chemical study are included as Attachment A. The data validation and laboratory reports, associated with the emergent chemical study are included on a compact disc as Attachments B and C.

2.0 INTRODUCTION

The Presidio Trust (Trust), at the request of the RWQCB, identified potential source areas for emergent chemical releases and developed a groundwater monitoring plan to address potential source areas at the Presidio. The Trust transmitted the results of their source area evaluation in a letter to the RWQCB, entitled *Preliminary Evaluation of Potential Emergent Chemical Use Areas and Locations at the Presidio of San Francisco (Source Evaluation Report),* dated 25 November 2003. The potential emergent chemical source areas were evaluated by the Trust considering the following information: 1) the existing environmental data currently contained within the Trust's database; 2) the potential for an emergent chemical or a material containing an emergent chemical to have been used and released in a significant quantity at the Presidio; and, 3) locations of sensitive groundwater use areas at the Presidio (Trust, 2003).

Based on the Trust's evaluation it was determined that a relatively limited number of Presidio locations may have involved the use of materials containing emergent chemicals. Additionally, the Trust determined that sufficient data currently exists at the Presidio to exclude or limit TCP and hexavalent chromium sampling from the emergent chemical study, as described in Sections 2.4 and 2.5, respectively (Trust, 2003).

Based on the results of the source evaluation, the Presidio Trust recommended the following:

1. Testing groundwater for perchlorate and NDMA at the Nike Missile Facility, as part of the Presidio-wide Groundwater Monitoring Program.

2. After further consultation with the U.S. Army and other reviewers regarding the Archive Search Report (ASR), the Trust will propose, for RWQCB approval, appropriate perchlorate sampling, if any, to be incorporated into the Presidio-wide Groundwater Monitoring Program.

3. Testing for 1,4-dioxane in TCE-impacted groundwater at the Building 900s Area, as part of the Presidio-wide Groundwater Monitoring Program.

4. Testing for TCP within a groundwater grab sample to be collected at Building 1167 during an upcoming remedial action, if groundwater is encountered.

5. Testing for PBDE in groundwater at Landfill E, as part of the Presidio-wide Groundwater Monitoring Program.

6. Testing for PBDE and NDMA at or near the intake of the Trust's Lobos Creek water treatment plant.

The recommended actions were addressed by the Trust in the following ways:

1. All Nike Missile Facility monitoring wells (NKGW01 through NKGW05) were sampled and analyzed for NDMA and perchlorate, as part of the Presidio-wide Groundwater Monitoring Program, First Quarter 2004.

2. This recommended action will be addressed following the U.S. Army's review of the ASR and a specific perchlorate sampling regime is proposed.

3. Building 900s Area monitoring wells 937GW102, 979GW111R, and 979GW112 were sampled and analyzed for 1,4-dioxane, as part of the Presidio-wide Groundwater Monitoring Program, First Quarter 2004.

4. This recommended action will be addressed during the upcoming remedial action at Building 1167, as described in Section 2.4.

5. Landfill E monitoring wells DAEGW03, DAEGW05, and DAEGW08 were sampled and analyzed for perchlorate and PBDE, as part of the Presidio-wide Groundwater Monitoring Program, First Quarter 2004.

6. The Trust collected a water sample (LCWT) from a sample port along the intake line prior to entering the Lobos Creek Water Treatment Facility by discharging water directly into the laboratory-supplied sample containers. The sample LCWT was analyzed for NDMA and PBDE.

Additional rationale for the recommended actions and background information on the emergent chemicals is provided in Sections 2.1 through 2.6. Groundwater sampling activities are detailed in Section 3.0 and the proposed sampling schedule is included as Table 1.

Historical and geologic information relative to each groundwater site sampled, with the exception of Lobos Creek, as part of this emergent chemical study is included in the *Semi-Annual Groundwater Monitoring Report, Third and Fourth Quarters 2003, Presidio of San Francisco, California* (Treadwell & Rollo, 2004). Groundwater data collected during the First Quarter 2004, as part of the ongoing Presidio-wide groundwater monitoring program, will be reported in the *Semi-Annual Groundwater Monitoring Report, First and Second Quarters 2004, Presidio of San Francisco, California,* which is scheduled to be completed in October 2004. Information on the emergent chemicals is discussed below.

2.1 Perchlorate

Perchlorate (ClO^4-) is the soluble anion associated with the solid salts of ammonium, potassium, and sodium perchlorate. Ammonium perchlorate is used as an energetics booster or oxidant in solid propellant for rockets and missiles. Ammonium perchlorate is also used in certain fireworks, the manufacture of matches, as a component of air bag inflators, and in analytical chemistry to preserve ionic strength.

Perchlorate is an anion that originates as a contaminant in groundwater and surface waters from the dissolution of ammonium, potassium, magnesium, or sodium salts. Perchlorate is highly mobile in groundwater and may persist for decades under typical groundwater and surface water conditions. The California Department of Health Services (CDHS) website indicates that the action level for perchlorate is 6 µg/L, as of August 2004 (http://www.dhs.ca.gov/ps/ddwem/chemicals/perchl/actionlevel.htm).

In addition to the CDHS action level, the United States Environmental Protection Agency (EPA) Region 9 Preliminary Remediation Goal (PRG) for perchlorate in tap water is 3.6 µg/L.

The *Source Evaluation Report* identifies the Nike Missile Facility and former Army explosive testing areas as potential perchlorate source areas. All Nike Missile Facility and select Landfill E monitoring wells had samples collected and analyzed for perchlorate during the First Quarter 2004. Perchlorate results are discussed in Section 4.1.

2.2 NDMA

NDMA is a decomposition product of Aerozine 50, a component used in the production of rocket fuel. NDMA has contaminated surface and groundwater at missile and other rocket fuel sites. NDMA has also been formed through other industrial processes, such as the chlorination of drinking water and the treatment of sewage for wastewater recycling. NDMA is considered by health experts to be a carcinogen (RWQCB, 2003).

The following remedial goals and action levels for NDMA have been established.

- The EPA's PRG for tap water is 0.0013 µg/L.

- The CDHS action level for NDMA is 0.01 µg/L.

The *Source Evaluation Report* identifies the Nike Missile Facility and former Army explosive testing areas as potential NDMA source areas. All Nike Missile Facility monitoring wells had samples collected and analyzed for NDMA during the First Quarter 2004. NDMA analytical results are discussed below in Section 4.2.

2.3 1,4-Dioxane

1,4-dioxane is primarily used as a stabilizer in solvents such as 1,1,1-trichloroethane and may have been used as an additive in trichloroethene (TCE). Additionally, 1,4-dioxane may have been used as a solvent in lacquers, varnishes, paints, plastics, dyes, oils, waxes and/or resins. It may also be found in some paint/varnish strippers, automotive coolants, and in pesticides as an inert ingredient.

1,4-dioxane primarily enters the environment when solvent and/or VOCs releases occur. It is generally very volatile and soluble in surface and groundwater. Exposure to small amounts of 1,4-dioxane may result in significant adverse health effects. The CDHS action level for 1,4-dioxane is 2 µg/L (RWQCB, 2003). Additionally, the EPA's Region 9 PRG for 1,4,-dioxane in tap water is 6.1 µg/L.

Historically, TCE was used at the Building 900s Area and has been previously detected in groundwater within Building 900s Area monitoring wells. Building 900s Area monitoring wells 937GW102, 979GW111R, and 979GW112 had samples collected and analyzed for 1,4-dioxane during the First Quarter 2004. 1,4-dioxane analytical results are discussed in Section 4.3.

2.4 TCP

TCP is a solvent primarily used for removing paint and varnish. The Building 900s Area and Building 1167 were historically used by the Army for painting. The Building 900s Area and several other areas have had groundwater samples collected and analyzed for TCP as part of the Presidio-wide Groundwater Monitoring Program without any detections to date. A TCP data summary report, detailing the existing data on TCP at the Presidio, was included in the *Source Evaluation Report.* No groundwater samples have been collected for TCP in the immediate vicinity of Building 1167. A grab groundwater sample will be collected and analyzed for TCP, if groundwater is encountered, during the planned remedial action at Building 1167, as described in the *Draft Work Plan, Pre-Remedial Design Investigation, Four Remedial Action Plan Sites, Presidio of San Francisco, California, dated July 8, 2004* prepared by MACTEC Engineering and Consulting, Inc. (Trust, 2003).

2.5 Hexavalent Chromium

Sufficient hexavalent chromium data exists at the Presidio to conclude that hexavalent chromium in Presidio groundwater is primarily related to naturally occurring serpentine soils. The Trust did not recommend additional groundwater sampling for hexavalent chromium, as part of this Emergent Chemical Study (Trust, 2003).

2.6 PBDE

PBDEs do not occur naturally in the environment and are used as flame-retardants used in polyurethane foam, textiles, and plastic electronic casings. PBDEs generally bioaccumulate in marine mammals, birds and humans. There are no action levels currently established for PBDE (RWQCB, 2003).

PBDEs are generally produced synthetically as a mixture, referred to as commercial pentabromodiphenyl ether (ComPeBDE). ComPeBDE is predominantly a mixture of tetrabromodiphenyl ether (TeBDE), pentabromodiphenyl ether (PeBDE) and hexabromodiphenyl ether (HxBDE). Commercial octabromodiphenyl ether (ComOcBDE) contains mainly heptabromodiphenyl ether (HeBDE), octabromobipheny ether (OcBDE) and HxBDE, but may also contain small amounts of PeBDE, nonabromodiphenyl ether (NoBDE) and deca-BDE (DeBDE). Commercial decabromodiphenyl ether (ComDeBDE) are almost entirely DeBDE, with a small amount of NoBDE. The identical base structure and combination of congener groups within the different commercial mixtures support consideration of a category approach to the assessment of these compounds. In addition, to the extent that the data permit comparison, consideration of these compounds as a group is supported by trends in physical/chemical properties with increasing degrees of bromination (http://www.hc-sc.gc.ca/hecs-sesc/exsd/pdf/PBDE.pdf).

Based on the known uses of PBDE, it is highly unlikely that PBDE was used or disposed of at the Presidio. However, in order to ensure that the Army did not dispose of any PBDE-containing material in its landfills the Trust collected groundwater samples from Landfill E monitoring wells DAEGW03, DAEGW05 and DAEGW08 during the First Quarter 2004 (Trust, 2003). PBDE analytical results are discussed in Section 4.4.

3.0 GROUNDWATER MONITORING

Groundwater levels were measured in all Building 900s Area, Landfill E, and Nike Missile Facility monitoring wells on 8 March 2004, as part of the ongoing Presidio-wide Groundwater Monitoring Program. Groundwater elevations for the aforementioned sites are included as Tables 2 through 4, respectively. Groundwater elevation contours associated with the aforementioned sites are illustrated on Figures 2 through 5.

Groundwater samples were collected and analyzed for perchlorate, NDMA, 1,4-dioxane, and PBDE from select Building 900s Area, Landfill E, and Nike Missile Facility monitoring wells, in accordance with Table 1. The details of the groundwater sampling activities are discussed in Section 3.2.

3.1 GroundwaterLevel Measurements and Interpretation

Groundwater-level measurements were collected on 8 March 2004 within Building 900s Area monitoring wells 937GW102, 979GW111R, and 979GW112, Landfill E monitoring wells DAEGW03, DAEGW05, and DAEGW08, and Nike Missile Facility monitoring wells NKGW01 through NKGW05, as part of the ongoing Presidio-wide Quarterly Monitoring Program. Groundwater elevation maps are included as Figures 2 through 5 and site specific groundwater elevation data is discussed below.

3.1.1 Building 900s Area

During the First Quarter 2004, depth to groundwater measurements were collected within all Building 900s Area groundwater monitoring wells proposed on 8 March 2004. Monitoring well 979GW112 is screened in the shallow zone and monitoring wells 937GW102 and 979GW111R are screened in the intermediate zone. Shallow and intermediate zone groundwater elevations and contours at the Building 900s Area are illustrated on Figures 2 and 3, respectively.

Shallow zone groundwater elevations ranged from 3.61 to 7.59 feet above Presidio lower low water (PLLW) in monitoring wells 979GW113 and 937GW12, respectively (Table 2). The groundwater flow direction was determined to be northeasterly in the southern portion of the Building 900s Area and northerly in the northern portion of the Building 900s Area (Figure 2). The groundwater gradient in the southern portion of the site was calculated to be approximately 0.011 feet per foot. The groundwater gradient in the northern portion of the site was calculated to be approximately 0.005 feet per foot. The groundwater gradients and flow directions observed during the First Quarter 2004 are consistent with historical interpretations.

Intermediate zone groundwater elevations ranged from 3.88 to 5.43 feet above PLLW in monitoring wells 979GW114 and 937GW102, respectively (Table 2). The groundwater flow direction was determined to be generally northerly within the intermediate zone at the Building 900s Area during the First Quarter 2004. The groundwater gradient was calculated to be approximately 0.003 feet per foot. The groundwater gradients and flow directions observed during the First Quarter 2004 are consistent with historical interpretations.

3.1.2 Landfill E

During the First Quarter 2004, depth to groundwater measurements were collected within all Landfill E groundwater monitoring wells proposed on 8 March 2004. Landfill E groundwater elevations and contours are illustrated on Figure 4.

Landfill E groundwater elevations ranged from 46.71 to 102.04 feet above PLLW in monitoring wells DAEGW04 and DAEGW06, respectively (Table 3). The groundwater flow direction was determined to be northeasterly across Landfill E. The groundwater gradient was calculated to be approximately 0.08 feet per foot. The groundwater gradients and flow directions observed during the First Quarter 2004 are consistent with historical interpretations.

3.1.3 Nike Missile Facility

During the First Quarter 2004, depth to groundwater measurements were collected within all Nike Missile Facility groundwater monitoring wells proposed on 8 March 2004. Nike Missile Facility groundwater elevations and contours are illustrated on Figure 5.

Nike Missile Facility groundwater elevations ranged from 249.18 to 321.39 feet above PLLW in monitoring wells NKGW01 and NKGW03, respectively (Table 4). The groundwater flow direction was determined to be southerly across the Nike Missile Facility. The groundwater gradient was calculated to be approximately 0.11 feet per foot. The groundwater gradients and flow directions observed during the First Quarter 2004 are consistent with historical interpretations.

3.2 Monitoring Well Purging and Sampling

Groundwater samples were collected from Building 900s Area monitoring wells 937GW102, 979GW111R, and 979GW112, Landfill E monitoring wells DAEGW03, DAEGW05, and DAEGW08, and Nike Missile Facility monitoring wells NKGW01 through NKGW05 during First Quarter 2004 as part of the Trust's emergent chemical study, in accordance with the approved sampling schedules (Table 1) and procedures described in the Field Sampling Plan (Treadwell & Rollo, 2001).

In addition to the groundwater samples discussed above, the Trust collected a water sample (LCWT) on 18 March 2004 from a sample port along the intake line prior to entering the Lobos Creek Water Treatment Facility by discharging water directly into the laboratory-supplied sample containers. Analytical results are discussed below and are included in Table 5.

Purge equipment, purging volumes, purge water parameters, and sampling equipment for each monitoring well are described in the purge records which are included as Attachment A. Purge water was stored in one of two 2,800-gallon aboveground polyethylene storage tanks located at the Central Magazine while the appropriate discharge analyses were completed. The results of the purge water analyses indicated that all discharge requirements were met. The purge water was discharged to the San Francisco Sanitary Sewer system, in accordance with the Presidio Trust's discharge permit. Analytical results of the discharged purge water will be published in the *Semi-Annual Groundwater Monitoring Report, First and Second Quarters 2004*, which is currently being prepared.

4.0 GROUNDWATER ANALYTICAL RESULTS

During the First Quarter 2004 select monitoring wells from the Building 900s Area, Landfill E, and the Nike Missile Facility were proposed for emergent chemical analyses at the request of the RWQCB. All groundwater monitoring wells were sampled for the emergent chemical analyses proposed for the First Quarter 2004. A summary of the monitoring wells sampled and the emergent chemical analyses results is below.

- Building 900s monitoring wells 937GW102, 979GW111R, and 979GW112 were sampled for 1,4-dioxane. Additionally, a duplicate sample (DUP0312041A) was collected from monitoring well 979GW112 during the First Quarter 2004.
- Landfill E monitoring wells DAEGW03, DAEGW05, and DAEGW08 were sampled for perchlorate and PBDE.
- All Nike Missile Facility monitoring wells (NKGW01 through NKGW05) were sampled for perchlorate and NDMA.
- The sample collected from the Lobos Creek Water Treatment Facility was analyzed for NDMA and PBDE.

The above sampling program is detailed in Table 1. Analytical results are discussed below and are tabulated in Table 5.

4.1 Perchlorate

Groundwater samples collected from monitoring wells DAEGW03, DAEGW05, DAEGW08 and NKGW01 through NKGW05 were analyzed for perchlorate by EPA Method 314.0 during the First Quarter 2004. Additionally, duplicate samples were collected from monitoring wells DAEGW03 and NKGW01 and labeled DUP0311043A and DUP0317042A, respectively. Perchlorate was not detected above laboratory reporting limits (4 µg/L) or the CDHS Action level of 6 µg/L within any of the primary or duplicate samples collected from any of the above monitoring wells.

4.2 NDMA

Groundwater samples collected from monitoring wells NKGW01 through NKGW05 and the water sample (LCWT) collected from the intake at the Lobos Creek Water Treatment facility were analyzed for NDMA by EPA Method 1625 during the First Quarter 2004. NDMA analysis was also completed on the duplicate sample (DUP0317042A) collected from NKGW01.

NDMA was detected at concentrations of 0.0048, 0.0016, 0.0025, and 0.0009 µg/L within NKGW01, DUP0317042A, NKGW04 and NKGW05, respectively. The Relative Percent Difference (RPD) between the primary and the duplicate samples collected from NKGW01 exceeds the 50% criteria specified in the *Presidio-wide Quality Assurance Project Plan Sampling and Analysis Plan* (QAPP) (Tetra Tech, 2001). However, the data was considered usable and did not require qualification by DataVal, as described in the First Quarter 2004 DataVal report presented in Attachment B.

NDMA was not detected within NKGW02 or NKGW03 above the laboratory detection limit of 0.002 µg/L. The detected concentrations below the practical quantitation limit of 0.002 µg/L and above the method detection limit of 0.0005 µg/L were estimated and therefore qualified with a 'J'.

NDMA was not detected within water sample LCWT above laboratory detection limits during the First Quarter 2004. The detected concentrations of NDMA within monitoring wells NKGW01 and NKGW04 exceed the EPA's Region 9 PRG of 0.0013 µg/L. None of the detected concentrations of NDMA exceeded the CDHS Action Level of 0.01 µg/L.

4.3 1,4-Dioxane

Groundwater samples collected from 937GW102, 979GW111R and 979GW112 as well as the duplicate sample (DUP0312041A) collected from 979GW112 were analyzed for 1,4-dioxane by EPA Method 8270 during the First Quarter 2004.

No groundwater samples analyzed for 1,4-dioxane during this quarter contained concentrations exceeding the laboratory reporting limits. The laboratory reporting limits for 1,4-dioxane during this quarter ranged from 0.95 to 0.98 µg/L, which are the well below the CDHS action level of 2 µg/L and are listed in Table 5.

4.4 PBDE

Groundwater samples collected from DAEGW03, DAEGW05, and DAEGW08 as well the duplicate sample (DUP0311043A) collected from DAEGW03 and the sample (LCWT) collected from Lobos Creek Water Treatment facility were analyzed for six PBDE congeners by EPA Method 1614 during the First Quarter 2004. The six PBDE congeners analyzed were 2,2',3,4,4',5'-hexabromodiphenyl ether (2,2',3,4,4',5'-HxBDE), 2,2',3,4,4'-pentabromodiphenyl ether (2,2',3,4,4'-PeBDE), 2,2'4,4',5,5'-Hexabromodiphenyl ether (2,2'4,4',5,5'-HeBDE), 2,2',4,4',5',6-hexabromodiphenyl ether (2,2',4,4',5',6-HxBDE), 2,2',4,4',6-pentabromodiphenyl ether (2,2',4,4',6-PeBDE), and 2,2',4,4'-tetrabromodiphenyl ether (2,2',4,4'-TeBDE) (Table 5).

None of the above mentioned PBDE congeners were detected above laboratory detection limits within any groundwater or Lobos Creek (LCWT) samples collected during the First Quarter 2004. The laboratory detection limits for each of the congeners is 1,000 picograms per liter (pg/L). One pg/L is equal to 0.000001 µg/L.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The Trust has completed a *Source Evaluation Report* and a follow up groundwater monitoring program concerning potential releases of emergent chemicals at the Presidio. NDMA was the only emergent chemical detected above laboratory detection limits during the First Quarter 2004. 1,4-dioxane, perchlorate and PBDE were not detected above laboratory detection limits within any samples analyzed during the First Quarter 2004.

NDMA was detected at concentrations ranging from 0.0009 to 0.0048 µg/L in groundwater samples collected from Nike Missile Facility monitoring wells. NDMA was not detected in NKGW02 or NKGW03 samples above laboratory detection limits during the First Quarter 2004. Detection limits and detected concentrations were well below the CDHS action level of 0.01 µg/L. However, the detected concentrations of NDMA within NKGW01 and NKGW04 exceed the EPA's Region 9 Tap Water PRG (0.0013 µg/L).

NDMA will be sampled within all Nike Missile Facility monitoring wells during the Third Quarter 2004 and will continue to be sampled within all Nike Missile Facility monitoring wells during the first and third quarters to establish a baseline of data. A *Remedial Action Plan* (RAP) is currently being prepared for the Nike Missile Facility and a revised groundwater monitoring plan will be implemented at the Nike Missile Facility, in accordance with the RAP when it is approved by the RWQCB and the stakeholders.

Neither NDMA or PBDE were detected above laboratory detection limits within the sample collected from the intake line at the Lobos Creek Water Treatment Facility.

A grab groundwater sample will be collected and analyzed for TCP, if groundwater is encountered, during the planned remedial action at Building 1167, as described in Section 2.4 of this report. The proposed sampling for TCP at Building 1167 is detailed in the *Draft Work Plan, Pre-Remedial Design Investigation, Four Remedial Action Plan Sites, Presidio of San Francisco, California, dated July 8, 2004* prepared by MACTEC Engineering and Consulting, Inc. (Trust, 2003).

No additional sampling for perchlorate, 1,4-dioxane, or PBDE is currently recommended at the Presidio.

REFERENCES

Presidio Trust (Trust), 2003. *Preliminary Evaluation of Potential Emergent Chemical Use Areas and Locations at the Presidio of San Francisco (Source Evaluation Report).* November.

Regional Water Quality Control Board (RWQCB), 2003. *Request for Technical Report on Emergent Chemicals, Sources, and Sampling, Presidio of San Francisco, California.* June.

Tetra Tech EM Inc., 2001. *Presidio-wide Quality Assurance Project Plan, Sampling and Analyses Plan, Presidio of San Francisco, California. Revision 1.* April.

Treadwell & Rollo, Inc. (Treadwell & Rollo), 2001. *Field Sampling Plan, Presidio Groundwater Monitoring Project.* April.

Treadwell & Rollo, 2004. *Semi-Annual Groundwater Monitoring Report, Third and Fourth Quarters 2003, Presidio of San Francisco, California.* April.

TABLES

Table 1
Proposed Sampling Schedule First Quarter 2004
Presidio Groundwater Monitoring Project
Presidio of San Francisco, California

		Sampling Information				Analytical Requirements			
Site Name/ID	Well ID	Water Level/Seep Evaluation	Sampling Method[1]	Well Access[2]	Sampling Order[3]	Perchlorate	NDMA	1,4-dioxane	PBDE
						Analytical Methods			
						EPA 314	EPA 1625	EPA 8270	EPA 1614
Building 900s	937GW102	Q	Normal	Truck	3			Q1	
Building 900s	979GW111R	Q	Normal	LIV	1			Q1	
Building 900s	979GW112	Q	Normal	LIV	3			Q1	
Landfill E	DAEGW03	Q	Normal	Hand	1	Q1			Q1
Landfill E	DAEGW05	Q	Normal	Hand	1	Q1			Q1
Landfill E	DAEGW08	Q	Normal	Hand	1	Q1			Q1
Nike Facility	NKGW01	Q	Modified	Truck	2	Q1	Q1		
Nike Facility	NKGW02	Q	Modified	Truck	1	Q1	Q1		
Nike Facility	NKGW03	Q	Low Flow	Truck	1	Q1	Q1		
Nike Facility	NKGW04	Q	Modified	Truck	3	Q1	Q1		
Nike Facility	NKGW05	Q	Modified	Truck	2	Q1	Q1		
Lobos Creek Water Treatment Facility	LCWT	NA	Sample Port	NA	NA		Q1		Q1

Notes

1 - Normal, Low Flow, Modified, and Surface water sampling techniques.

A description of sampling techniques can be found in the *Field Sampling Plan, Presidio of San Francisco*.

2 - Truck - Well accessible by truck

LIV - Low Impact Vehicle - Well accessible by LIV or hand truck only

Hand - Well accessible by hand truck only

3 - Sampling Order: At each site sample the wells with the lowest number first.

For example, sample the number 1 wells first, the number 2 wells second etc. The following key explains the numbering system.

1 - Wells without significant detections of chemicals of concern
2 - Wells with occasional detections of low concentrations chemicals of concern
3 - Wells with consistent or recent detections of low concentrations chemicals of concern
4 - Wells with high concentrations of chemicals of concern
5 - Wells with very high concentrations of chemicals of concern. Potential for free phase product.

Q1, Q3, etc. - Sample during quarters specified only

EPA - United States Environmental Protection Agency

PBDE - polybrominated diphenyl ether

NDMA - N-nitrosodimethylamine

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Shallow Monitoring Wells						
937GW06	03/08/04	--	5.69	11.05	5.36	MW
	12/01/03	--	5.85	11.05	5.20	MW
	08/11/03	Low	6.47	11.05	4.58	MW
	06/02/03	Low	6.50	11.05	4.55	MW
	03/10/03	Low	6.29	11.05	4.76	MW
	12/02/02	Low	6.13	11.05	4.92	MW
	08/26/02	Low	6.67	11.05	4.38	MW
	05/28/02	Low	6.67	11.05	4.38	MW
	03/04/02	Low	5.93	11.05	5.12	MW
	11/26/01	Low	6.27	11.05	4.78	MW
	11/26/01	High	5.83	11.05	5.22	MW
	08/27/01	Low	6.67	11.05	4.38	MW
	08/27/01	High	6.70	11.05	4.35	MW
	05/08/01	Low	6.75	11.05	4.30	MW
	05/08/01	High	6.55	11.05	4.50	MW
937GW07	03/08/04	--	8.70	13.94	5.24	--
	12/01/03	--	9.02	13.94	4.92	--
	08/11/03	Low	9.31	13.94	4.63	MW
	06/02/03	Low	9.37	13.94	4.57	MW
	03/10/03	Low	9.41	13.94	4.53	MW
	12/02/02	Low	8.95	13.94	4.99	MW
	08/26/02	Low	9.71	13.94	4.23	MW
	05/28/02	Low	9.53	13.94	4.41	MW
	03/04/02	Low	9.12	13.94	4.82	MW
	11/26/01	Low	9.13	13.94	4.81	MW
	11/26/01	High	9.04	13.94	4.90	MW
	08/27/01	Low	9.84	13.94	4.10	MW
	08/27/01	High	9.85	13.94	4.09	MW
	05/08/01	Low	9.76	13.94	4.18	MW
	05/08/01	High	9.71	13.94	4.23	MW
937GW12	03/08/04	--	2.75	10.34	7.59	MW
	12/01/03	--	4.67	10.34	5.67	MW
	08/11/03	Low	5.25	10.34	5.09	MW
	06/02/03	Low	5.39	10.34	4.95	MW
	03/10/03	Low	5.19	10.34	5.15	MW
	12/02/02	Low	5.02	10.34	5.32	MW
	08/26/02	Low	5.59	10.34	4.75	MW
	05/28/02	Low	5.50	10.34	4.84	MW
	03/04/02	Low	4.95	10.34	5.39	MW
	11/26/01	Low	5.29	10.34	5.05	MW
	11/26/01	High	5.16	10.34	5.18	MW
	08/27/01	Low	5.85	10.34	4.49	MW
	08/27/01	High	5.89	10.34	4.45	MW
	05/08/01	Low	5.67	10.34	4.67	MW
	05/08/01	High	5.82	10.34	4.52	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Shallow Monitoring Wells						
937GW15	03/08/04	--	6.92	12.90	5.98	MW
	12/01/03	--	7.83	12.90	5.07	MW
	08/11/03	Low	8.16	12.90	4.74	MW
	06/02/03	Low	8.20	12.90	4.70	MW
	03/10/03	Low	8.00	12.90	4.90	MW
	12/02/02	Low	7.85	12.90	5.05	MW
	08/26/02	Low	8.39	12.90	4.51	MW
	05/28/02	Low	8.35	12.90	4.55	MW
	03/04/02	Low	7.78	12.90	5.12	MW
	11/26/01	Low	7.98	12.90	4.92	MW
	11/26/01	High	7.82	12.90	5.08	MW
	08/27/01	Low	8.58	12.90	4.32	MW
	08/27/01	High	8.58	12.90	4.32	MW
	05/08/01	Low	8.68	12.90	4.22	MW
	05/08/01	High	8.61	12.90	4.29	MW
937GW35	03/08/04	--	7.11	11.64	4.53	MW
	12/01/03	--	6.11	11.64	5.53	MW
	08/11/03	Low	6.96	11.64	4.68	MW
	06/02/03	Low	6.83	11.64	4.81	MW
	03/10/03	Low	6.56	11.64	5.08	MW
	12/02/02	Low	6.43	11.64	5.21	MW
	08/26/02	Low	7.41	11.64	4.23	MW
	05/28/02	Low	6.78	11.64	4.86	MW
	03/04/02	Low	6.13	11.64	5.51	MW
	11/26/01	Low	6.63	11.64	5.01	MW
	11/26/01	High	6.46	11.64	5.18	MW
	08/27/01	Low	7.43	11.64	4.21	MW
	08/27/01	High	7.43	11.64	4.21	MW
	05/08/01	Low	6.98	11.64	4.66	MW
	05/08/01	High	7.18	11.64	4.46	MW
937GW37	03/08/04	--	6.86	12.74	5.88	MW
	12/01/03	--	7.49	12.74	5.25	MW
	08/11/03	Low	8.07	12.74	4.67	MW
	06/02/03	Low	8.10	12.74	4.64	MW
	03/10/03	Low	7.92	12.74	4.82	MW
	12/02/02	Low	7.75	12.74	4.99	MW
	08/26/02	Low	8.30	12.74	4.44	MW
	05/28/02	Low	8.25	12.74	4.49	MW
	03/04/02	Low	7.64	12.74	5.10	MW
	11/26/01	Low	7.77	12.74	4.97	MW
	11/26/01	High	7.66	12.74	5.08	MW
	08/27/01	Low	8.34	12.74	4.40	MW
	08/27/01	High	8.43	12.74	4.31	MW
	05/08/01	Low	8.54	12.74	4.20	MW
	05/08/01	High	8.37	12.74	4.37	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Shallow Monitoring Wells						
937GW101	03/08/04	--	6.35	11.81	5.46	MW
	12/01/03	--	6.65	11.81	5.16	MW
	08/11/03	Low	7.19	11.81	4.62	MW
	06/02/03	Low	7.21	11.81	4.60	MW
	03/10/03	Low	7.09	11.81	4.72	MW
	12/02/02	Low	6.88	11.81	4.93	MW
	08/26/02	Low	7.46	11.81	4.35	MW
	05/28/02	Low	7.43	11.81	4.38	MW
	03/04/02	Low	6.81	11.81	5.00	MW
	11/26/01	Low	7.04	11.81	4.77	MW
	11/26/01	High	6.65	11.81	5.16	MW
	08/27/01	Low	7.45	11.81	4.36	MW
	08/27/01	High	7.46	11.81	4.35	MW
937GW104	03/08/04	--	6.72	11.52	4.80	MW
	12/01/03	--	6.02	11.52	5.50	MW
	08/11/03	Low	6.75	11.52	4.77	MW
	06/02/03	Low	6.45	11.52	5.07	MW
	03/10/03	Low	6.98	11.52	4.54	MW
	12/02/02	Low	6.03	11.52	5.49	MW
	08/26/02	Low	7.26	11.52	4.26	MW
	05/28/02	Low	6.86	11.52	4.66	MW
	03/04/02	Low	6.47	11.52	5.05	MW
	11/26/01	Low	6.63	11.52	4.89	MW
	11/26/01	High	6.07	11.52	5.45	MW
	08/27/01	Low	7.00	11.52	4.52	MW
	08/27/01	High	7.05	11.52	4.47	MW
937GW106	03/08/04	--	9.82	15.20	5.38	MW
	12/01/03	--	10.15	15.20	5.05	MW
	08/11/03	Low	10.22	15.20	4.98	MW
	06/02/03	Low	10.27	15.20	4.93	MW
	03/10/03	Low	9.13	15.20	6.07	MW
	12/02/02	Low	10.09	15.20	5.11	MW
	08/26/02	Low	10.37	15.20	4.83	MW
	05/28/02	Low	10.19	15.20	5.01	MW
	03/04/02	Low	8.83	15.20	6.37	MW
	11/26/01	Low	9.82	15.20	5.38	MW
	11/26/01	High	9.80	15.20	5.40	MW
	08/27/01	Low	10.37	15.20	4.83	MW
	08/27/01	High	10.39	15.20	4.81	MW
937GW108	03/08/04	--	5.64	12.11	5.25	MW
	12/01/03	--	6.86	12.11	5.25	MW
	08/11/03	Low	7.45	12.11	4.66	MW
	06/02/03	Low	7.44	12.11	4.67	MW
	03/10/03	Low	7.17	12.11	4.94	MW
	12/02/02	Low	7.25	12.11	4.86	MW
	08/26/02	Low	5.94	12.11	6.17	MW
	05/28/02	Low	7.68[3]	12.11	4.43	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Shallow Monitoring Wells						
979GW109	03/08/04	--	6.51	10.62	4.97	MW
	12/01/03	--	5.65	10.62	4.97	MW
	08/11/03	Low	6.58	10.62	4.04	MW
	06/02/03	Low	6.69	10.62	3.93	MW
	03/10/03	Low	6.18	10.62	4.44	MW
	12/02/02	Low	6.07	10.62	4.55	MW
	08/26/02	Low	6.91	10.62	3.71	MW
	05/28/02	Low	6.75	10.62	3.87	MW
	03/04/02	Low	5.96	10.62	4.66	MW
	11/26/01	Low	6.63	10.62	3.99	MW
	11/26/01	High	6.02	10.62	4.60	MW
	08/27/01	Low	6.57	10.62	4.05	MW
	08/27/01	High	6.57	10.62	4.05	MW
979GW112	03/08/04	--	15.52	19.72	4.20	MW
	12/01/03	--	15.06	19.72	4.66	MW
	08/11/03	Low	15.85	19.72	3.87	MW
	06/02/03	Low	15.98	19.72	3.74	MW
	03/10/03	Low	14.95	19.72	4.77	MW
	12/02/02	Low	15.60	19.72	4.12	MW
	08/26/02	Low	16.03	19.72	3.69	MW
	05/28/02	Low	15.97	19.72	3.75	MW
	03/04/02	Low	14.65	19.72	5.07	MW
	11/26/01	Low	15.77	19.72	3.95	MW
	11/26/01	High	15.25	19.72	4.47	MW
	08/27/01	Low	15.73	19.72	3.99	MW
	08/27/01	High	15.74	19.72	3.98	MW
979GW113	03/08/04	--	6.80	10.41	3.61	MW
	12/01/03	--	5.68	10.41	4.73	MW
	08/11/03	Low	6.98	10.41	3.43	MW
	06/02/03	Low	7.12	10.41	3.29	MW
	03/10/03	Low	6.68	10.41	3.73	MW
	12/02/02	Low	6.29	10.41	4.12	MW
	08/26/02	Low	7.25	10.41	3.16	MW
	05/28/02	Low	7.15	10.41	3.26	MW
	03/04/02	Low	6.28	10.41	4.13	MW
	11/26/01	Low	7.03	10.41	3.38	MW
	11/26/01	High	5.80	10.41	4.61	MW
	08/27/01	Low	6.41	10.41	4.00	MW
	08/27/01	High	6.41	10.41	4.00	MW
979GW115	03/08/04	--	8.24	12.26	4.02	MW
	12/01/03	--	7.66	12.26	4.60	MW
	08/11/03	Low	8.28	12.26	3.98	MW
	06/02/03	Low	8.49	12.26	3.77	MW
	03/10/03	Low	7.97	12.26	4.29	MW
	12/02/02	Low	7.93	12.26	4.33	MW
	08/26/02	Low	8.61	12.26	3.65	MW
	05/28/02	Low	8.45	12.26	3.81	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Shallow Monitoring Wells						
979GW115	03/04/02	Low	7.65	12.26	4.61	MW
	11/26/01	Low	8.27	12.26	3.99	MW
	11/26/01	High	8.03	12.26	4.23	MW
	08/27/01	Low	8.42	12.26	3.84	MW
	08/27/01	High	8.45	12.26	3.81	MW
CGGW01	03/08/04	Low	3.55	10.53	6.98	MW
	08/11/03	Low	5.43	10.53	5.10	MW
	06/02/03	Low	5.53	10.53	5.00	MW
	03/10/03	Low	5.33	10.53	5.20	MW
	12/02/02	Low	5.12	10.53	5.41	MW
	08/26/02	Low	5.68	10.53	4.85	MW
	05/28/02	Low	5.63	10.53	4.90	MW
	03/04/02	Low	5.10	10.53	5.43	MW
	11/26/01	Low	5.09	10.53	5.44	MW
	11/26/01	High	5.06	10.53	5.47	MW
	08/27/01	Low	5.90	10.53	4.63	MW
	08/27/01	High	5.89	10.53	4.64	MW
	05/08/01	Low	5.93	10.53	4.60	MW
	05/08/01	High	5.92	10.53	4.61	MW
CGGW02	03/08/04	Low	NM	9.87	NM	MW
	08/11/03	Low	5.02	9.87	4.85	MW
	06/02/03	Low	5.16	9.87	4.71	MW
	03/10/03	Low	5.20	9.87	4.67	MW
	12/02/02	Low	4.70	9.87	5.17	MW
	08/26/02	Low	5.21	9.87	4.66	MW
	05/28/02	Low	5.27	9.87	4.60	MW
	03/04/02	Low	4.94	9.87	4.93	MW
	11/26/01	Low	4.88	9.87	4.99	MW
	11/26/01	High	4.87	9.87	5.00	MW
	08/27/01	Low	5.60	9.87	4.27	MW
	08/27/01	High	5.59	9.87	4.28	MW
	05/08/01	Low	5.48	9.87	4.39	MW
	05/08/01	High	5.55	9.87	4.32	MW
CGGW03	03/08/04	--	NM	11.58	NM	MW
	08/11/03	--	Not located	11.58	--	MW
	06/02/03	--	Not located	11.58	--	MW
	03/10/03	--	Not located	11.58	--	MW
	12/02/02	--	Not located	11.58	--	MW
	08/26/02	--	Not located	11.58	--	MW
	05/28/02	--	Not located	11.58	--	MW
	03/04/02	--	Not located	11.58	--	MW
	11/26/01	--	Not located	11.58	--	MW
	08/27/01	--	Not located	11.58	--	MW
	05/08/01	--	Not located	11.58	--	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Intermediate Monitoring Wells						
937GW42	03/08/04	--	5.40	10.62	5.22	MW
	12/01/03	--	5.75	10.62	4.87	MW
	08/11/03	Low	6.35	10.62	4.27	MW
	06/02/03	Low	6.11	10.62	4.51	MW
	03/10/03	Low	5.75	10.62	4.87	MW
	12/02/02	Low	6.06	10.62	4.56	MW
	08/26/02	Low	6.27	10.62	4.35	MW
	05/28/02	Low	6.50	10.62	4.12	MW
	03/04/02	Low	5.69	10.62	4.93	MW
	11/26/01	Low	6.14	10.62	4.48	MW
	11/26/01	High	5.12	10.62	5.50	MW
	08/27/01	Low	6.27	10.62	4.35	MW
	08/27/01	High	6.36	10.62	4.26	MW
	05/08/01	Low	9.97	10.62	0.65	MW
	05/08/01	High	9.05	10.62	1.57	MW
937GW102	03/08/04	--	6.26	11.69	5.43	MW
	12/01/03	--	6.59	11.69	5.10	MW
	08/11/03	Low	7.30	11.69	4.39	MW
	06/02/03	Low	7.31	11.69	4.38	MW
	03/10/03	Low	7.03	11.69	4.66	MW
	12/02/02	Low	7.10	11.69	4.59	MW
	08/26/02	Low	7.47	11.69	4.22	MW
	05/28/02	Low	7.51	11.69	4.18	MW
	03/04/02	Low	6.80	11.69	4.89	MW
	11/26/01	Low	7.22	11.69	4.47	MW
	11/26/01	High	6.59	11.69	5.10	MW
	08/27/01	Low	7.38	11.69	4.31	MW
	08/27/01	High	7.41	11.69	4.28	MW
937GW105	03/08/04	--	6.55	11.50	4.95	MW
	12/01/03	--	6.57	11.50	4.93	MW
	08/11/03	Low	7.52	11.50	3.98	MW
	06/02/03	Low	7.69	11.50	3.81	MW
	03/10/03	Low	7.30	11.50	4.20	MW
	12/02/02	Low	7.71	11.50	3.79	MW
	08/26/02	Low	7.62	11.50	3.88	MW
	05/28/02	Low	7.78	11.50	3.72	MW
	03/04/02	Low	6.84	11.50	4.66	MW
	11/26/01	Low	7.56	11.50	3.94	MW
	11/26/01	High	6.47	11.50	5.03	MW
	08/27/01	Low	7.19	11.50	4.31	MW
	08/27/01	High	7.27	11.50	4.23	MW
937GW107	03/08/04	--	10.51	15.11	4.60	MW
	12/01/03	--	10.23	15.11	4.88	MW
	08/11/03	Low	11.26	15.11	3.85	MW
	06/02/03	Low	11.42	15.11	3.69	MW
	03/10/03	Low	10.66	15.11	4.45	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Intermediate Monitoring Wells						
937GW107	12/02/02	Low	11.27	15.11	3.84	MW
	08/26/02	Low	11.37	15.11	3.74	MW
	05/28/02	Low	11.45	15.11	3.66	MW
	03/04/02	Low	10.39	15.11	4.72	MW
	11/26/01	Low	11.24	15.11	3.87	MW
	11/26/01	High	10.17	15.11	4.94	MW
	08/27/01	Low	10.83	15.11	4.28	MW
	08/27/01	High	10.87	15.11	4.24	MW
950GW108	03/08/04	--	7.13	11.60	4.47	MW
	12/01/03	--	6.90	11.60	4.70	MW
	08/11/03	Low	7.88	11.60	3.72	MW
	06/02/03	Low	8.03	11.60	3.57	MW
	03/10/03	Low	7.33	11.60	4.27	MW
	12/02/02	Low	8.00	11.60	3.60	MW
	08/26/02	Low	7.82	11.60	3.78	MW
	05/28/02	Low	8.10	11.60	3.50	MW
	03/04/02	Low	7.04	11.60	4.56	MW
	11/26/01	Low	7.88	11.60	3.72	MW
	11/26/01	High	6.71	11.60	4.89	MW
	08/27/01	Low	7.32	11.60	4.28	MW
	08/27/01	High	7.40	11.60	4.20	MW
979GW110	03/08/04	--	6.54	10.62	4.08	MW
	12/01/03	--	5.76	10.62	4.86	MW
	08/11/03	Low	7.15	10.62	3.47	MW
	06/02/03	Low	7.29	10.62	3.33	MW
	03/10/03	Low	6.67	10.62	3.95	MW
	12/02/02	Low	7.33	10.62	3.29	MW
	08/26/02	Low	7.08	10.62	3.54	MW
	05/28/02	Low	7.43	10.62	3.19	MW
	03/04/02	Low	6.41	10.62	4.21	MW
	11/26/01	Low	7.17	10.62	3.45	MW
	11/26/01	High	5.75	10.62	4.87	MW
	08/27/01	Low	6.41	10.62	4.21	MW
	08/27/01	High	6.45	10.62	4.17	MW
979GW111R	03/08/04	--	15.46	19.69	4.23	MW
	12/01/03	--	15.02	19.69	4.67	MW
	08/11/03	Low	15.79	19.69	3.90	MW
	06/02/03	Low	15.67	19.69	4.02	MW
	03/10/03	Low	14.90	19.69	4.79	MW
	12/02/02	Low	15.55	19.69	4.14	MW
	08/26/02	Low	15.98	19.69	3.71	MW
	05/28/02	Low	15.92	19.69	3.77	MW
979GW114	03/08/04	--	6.65	10.53	3.88	MW
	12/01/03	--	5.75	10.53	4.78	MW
	08/11/03	Low	7.01	10.53	3.52	MW
	06/02/03	Low	7.08	10.53	3.45	MW
	03/10/03	Low	6.64	10.53	3.89	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Intermediate Monitoring Wells						
979GW114	12/02/02	Low	6.90	10.53	3.63	MW
	08/26/02	Low	7.00	10.53	3.53	MW
	05/28/02	Low	7.26	10.53	3.27	MW
	03/04/02	Low	6.33	10.53	4.20	MW
	11/26/01	Low	6.90	10.53	3.63	MW
	11/26/01	High	6.14	10.53	4.39	MW
	08/27/01	Low	6.71	10.53	3.82	MW
	08/27/01	High	6.66	10.53	3.87	MW
979GW116	03/08/04	--	8.19	12.19	4.00	MW
	12/01/03	--	7.60	12.19	4.59	MW
	08/11/03	Low	8.25	12.19	3.94	MW
	06/02/03	Low	8.45	12.19	3.74	MW
	03/10/03	Low	7.90	12.19	4.29	MW
	12/02/02	Low	7.90	12.19	4.29	MW
	08/26/02	Low	8.56	12.19	3.63	MW
	05/28/02	Low	8.41	12.19	3.78	MW
	03/04/02	Low	7.59	12.19	4.60	MW
	11/26/01	Low	8.24	12.19	3.95	MW
	11/26/01	High	7.93	12.19	4.26	MW
	08/27/01	Low	8.34	12.19	3.85	MW
	08/27/01	High	8.37	12.19	3.82	MW
Deep Monitoring Wells						
937GW32R	03/08/04	--	5.12	10.60	5.48	MW
	12/01/03	--	5.57	10.60	5.03	MW
	08/11/03	Low	6.26	10.60	4.34	MW
	06/02/03	Low	6.31	10.60	4.29	MW
	03/10/03	Low	5.86	10.60	4.74	MW
	12/02/02	Low	6.10	10.60	4.50	MW
	08/26/02	Low	6.37	10.60	4.23	MW
	05/28/02	Low	6.47	10.60	4.13	MW
	03/04/02	Low	5.69	10.60	4.91	MW
	11/26/01	Low	6.19	10.60	4.41	MW
	11/26/01	High	5.50	10.60	5.10	MW
	08/27/01	Low	6.18	10.60	4.42	MW
	08/27/01	High	6.24	10.60	4.36	MW
	05/08/01	Low	6.08	10.60	4.52	MW
	05/08/01	High	6.72	10.60	3.88	MW
937GW38	03/08/04	--	3.86	10.23	6.37	MW
	12/01/03	--	4.73	10.23	5.50	MW
	08/11/03	Low	5.35	10.23	4.88	MW
	06/02/03	Low	5.20	10.23	5.03	MW
	03/10/03	Low	4.85	10.23	5.38	MW
	12/02/02	Low	5.00	10.23	5.23	MW
	08/26/02	Low	5.64	10.23	4.59	MW
	05/28/02	Low	5.10	10.23	5.13	MW
	03/04/02	Low	4.60	10.23	5.63	MW
	11/26/01	Low	4.91	10.23	5.32	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water[1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Deep Monitoring Wells						
937GW38	11/26/01	High	4.30	10.23	5.93	MW
	08/27/01	Low	4.69	10.23	5.54	MW
	08/27/01	High	4.70	10.23	5.53	MW
	05/08/01	Low	5.12	10.23	5.11	MW
	05/08/01	High	4.83	10.23	5.40	MW
937GW39	12/01/03	--	7.40	12.49	5.09	MW
	12/01/03	--	7.64	12.49	4.85	MW
	08/11/03	Low	8.56	12.49	3.93	MW
	06/02/03	Low	8.73	12.49	3.76	MW
	03/10/03	Low	8.26	12.49	4.23	MW
	12/02/02	Low	8.66	12.49	3.83	MW
	08/26/02	Low	8.75	12.49	3.74	MW
	05/28/02	Low	8.74	12.49	3.75	MW
	03/04/02	Low	8.06	12.49	4.43	MW
	11/26/01	Low	8.72	12.49	3.77	MW
	11/26/01	High	7.77	12.49	4.72	MW
	08/27/01	Low	8.37	12.49	4.12	MW
	08/27/01	High	8.47	12.49	4.02	MW
	05/08/01	Low	9.15	12.49	3.34	MW
	05/08/01	High	8.17	12.49	4.32	MW
937GW103	03/08/04	--	6.09	11.56	5.47	MW
	12/01/03	--	6.44	11.56	5.12	MW
	08/11/03	Low	7.15	11.56	4.41	MW
	06/02/03	Low	7.15	11.56	4.41	MW
	03/10/03	Low	6.82	11.56	4.74	MW
	12/02/02	Low	6.95	11.56	4.61	MW
	08/26/02	Low	7.30	11.56	4.26	MW
	05/28/02	Low	7.35	11.56	4.21	MW
	03/04/02	Low	6.59	11.56	4.97	MW
	11/26/01	Low	7.06	11.56	4.50	MW
	11/26/01	High	6.42	11.56	5.14	MW
	08/27/01	Low	7.16	11.56	4.40	MW
	08/27/01	High	7.15	11.56	4.41	MW
979GW117	03/08/04	--	9.65	12.17	2.52	MW
	12/01/03	--	10.05	12.17	2.12	MW
	08/11/03	Low	8.64	12.17	3.53	MW
	06/02/03	Low	10.73	12.17	1.44	MW
	03/18/03	Low	9.19[4]	12.17	2.98	MW
	12/02/02	Low	9.16	12.17	3.01	MW
	08/26/02	Low	9.83	12.17	2.34	MW
	05/28/02	Low	9.39	12.17	2.78	MW

Table 2
Groundwater Elevation Summary
Building 900s Area
Presidio of San Francisco, California

Well ID	Date	Tidal Cycle	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
Deep Monitoring Wells						
979GW117	03/04/02	Low	8.94	12.17	3.23	MW
	11/26/01	Low	8.50	12.17	3.67	MW
	11/26/01	High	9.67	12.17	2.50	MW
	08/27/01	Low	8.61	12.17	3.56	MW
	08/27/01	High	8.54	12.17	3.63	MW

Notes
1- All depth to water measurements are an average of three measurements recorded in the field.
2 - Elevation indicates bottom of casing elevation.
3 - This depth to water (7.68 feet) was measured on 4 June 2002 during sampling.
4 - This depth to water (9.19 feet) was measured at approximately 10:30 AM on 18 March 2003 during sampling.
All elevations reported in Presidio lower low water (PLLW) datum.
MW - Monitoring well
-- = Groundwater level measurements were not collected on a tidal schedule beginning with Fourth Quarter 2003.

Table 3
Groundwater Elevation Summary
Landfill E
Presidio of San Francisco, California

Well ID	Date	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
DAEGW03	03/08/04	59.68	107.48	47.80	MW
	12/01/03	60.50	107.48	46.98	MW
	08/11/03	59.43	107.48	48.05	MW
	06/02/03	58.68	107.48	48.80	MW
	03/10/03	58.62	107.48	48.86	MW
	12/02/02	59.56	107.48	47.92	MW
	08/26/02	58.79	107.48	48.69	MW
	05/28/02	58.14	107.48	49.34	MW
	03/04/02	58.50	107.48	48.98	MW
	11/26/01	59.84	107.48	47.64	MW
	08/27/01	58.87	107.48	48.61	MW
	05/08/01	57.96	107.48	49.52	MW
DAEGW04	03/08/04	47.67	94.38	46.71	MW
	12/01/03	48.74	94.38	45.64	MW
	08/11/03	47.68	94.38	46.70	MW
	06/02/03	46.95	94.38	47.43	MW
	03/10/03	46.78	94.38	47.60	MW
	12/02/02	47.81	94.38	46.57	MW
	08/26/02	47.02	94.38	47.36	MW
	05/28/02	46.42	94.38	47.96	MW
	03/04/02	46.61	94.38	47.77	MW
	11/26/01	48.05	94.38	46.33	MW
	08/27/01	47.11	94.38	47.27	MW
	05/08/01	46.21	94.38	48.17	MW
DAEGW05	03/08/04	58.22	105.65	47.43	MW
	12/01/03	59.25	105.65	46.40	MW
	08/11/03	58.23	105.65	47.42	MW
	06/02/03	57.50	105.65	48.15	MW
	03/10/03	57.35	105.65	48.30	MW
	12/02/02	58.31	105.65	47.34	MW
	08/26/02	57.64	105.65	48.01	MW
	05/28/02	56.96	105.65	48.69	MW
	03/04/02	57.19	105.65	48.46	MW
	11/26/01	58.71	105.65	46.94	MW
	08/27/01	57.71	105.65	47.94	MW
	05/08/01	56.80	105.65	48.85	MW
DAEGW06	03/08/04	17.22	119.26	102.04	MW
	12/01/03	25.78	119.26	93.48	MW
	08/11/03	21.64	119.26	97.62	MW
	06/02/03	15.69	119.26	103.57	MW
	03/10/03	16.68	119.26	102.58	MW
	12/02/02	25.15	119.26	94.11	MW
	08/26/02	21.68	119.26	97.58	MW
	05/28/02	15.12	119.26	104.14	MW
	03/04/02	17.34	119.26	101.92	MW
	11/26/01	26.88	119.26	92.38	MW
	08/27/01	25.25	119.26	94.01	MW
	05/08/01	20.39	119.26	98.87	MW
DAEGW07	03/08/04	4.31	75.66	71.35	MW
	12/01/03	Dry	75.66	67.66	MW
	08/11/03	9.61	75.66	66.05	MW
	06/02/03	9.37	75.66	66.29	MW
	03/10/03	8.39	75.66	67.27	MW
	12/02/02	9.59	75.66	66.07	MW
	08/26/02	9.60	75.66	66.50 [2]	MW
	05/28/02	9.56	75.66	66.54 [2]	MW

Table 3
Groundwater Elevation Summary
Landfill E
Presidio of San Francisco, California

Well ID	Date	Average Depth to Water[1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
DAEGW07	03/04/02	6.06	75.66	69.60	MW
	11/26/01	9.58	75.66	66.52[2]	MW
	08/27/01	9.48	75.66	66.18	MW
	05/08/01	9.50	75.66	66.16	MW
DAEGW08	03/08/04	24.78	71.66	46.88	MW
	12/01/03	26.12	71.66	45.54	MW
	08/11/03	25.08	71.66	46.58	MW
	06/02/03	24.26	71.66	47.40	MW
	03/10/03	24.06	71.66	47.60	MW
	12/02/02	25.23	71.66	46.43	MW
	08/26/02	24.41	71.66	47.25	MW
	05/28/02	23.68	71.66	47.98	MW
	03/04/02	23.81	71.66	47.85	MW
	11/26/01	25.49	71.66	46.17	MW
	08/27/01	24.51	71.66	47.15	MW
	05/08/01	23.42	71.66	48.58[2]	MW
DAEGW101	03/08/04	35.78	107.09	71.31	MW
	12/01/03	Dry	107.09	65.09	MW
	08/11/03	42.35	107.09	64.74	MW
	06/02/03	39.29	107.09	67.80	MW
	03/10/03	35.51	107.09	71.58	MW
DAEGW102	03/08/04	19.07	116.72	97.65	MW
	12/01/03	21.37	116.72	95.35	MW
	08/11/03	19.08	116.72	97.64	MW
	06/02/03	17.38	116.72	99.34	MW
	03/10/03	18.41	116.72	98.31	MW
DAEGW103	03/08/04	29.64	111.73	82.09	MW
	12/01/03	29.59	111.73	82.14	MW
	08/11/03	29.42	111.73	82.31	MW
	06/02/03	29.34	111.73	82.39	MW
	03/10/03	29.27	111.73	82.46	MW
DAEGW104	03/08/04	25.96	120.28	94.32	MW
	12/01/03	27.21	120.28	93.07	MW
	08/11/03	24.09	120.28	96.19	MW
	06/02/03	21.90	120.28	98.38	MW
	03/10/03	23.10	120.28	97.18	MW
DAEPZ101	03/08/04	25.89	113.83	87.94	PZ
	12/01/03	28.32	113.83	85.51	PZ
	08/11/03	27.47	113.83	86.36	PZ
	06/02/03	26.80	113.83	87.03	PZ
	03/10/03	26.27	113.83	87.56	PZ
DAEPZ102	03/08/04	28.85	110.09	81.24	PZ
	12/01/03	29.22	110.09	80.87	PZ
	08/11/03	28.72	110.09	81.37	PZ
	06/02/03	28.58	110.09	81.51	PZ
	03/10/03	28.69	110.09	81.40	PZ
DAESP03	03/08/04	not flowing	--	--	Surface
	12/01/03	not flowing	--	--	Surface
	08/11/03	not flowing	--	--	Surface
	06/02/03	not flowing	--	--	Surface

Notes

1 - All depth to water measurements are an average of three measurements recorded in the field.
2 - The limited amount of water observed within this well most likely represents water in the end cap not representative of the natural aquifer.
MW- Monitoring well
feet PLLW - feet above Presidio lower low water vertical datum

Table 4
Groundwater Elevation Summary
Nike Missile Facility
Presidio of San Francisco, California

Well ID	Date	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
NKGW01	03/08/04	29.20	278.38	249.18	MW
	12/01/03	39.05	278.38	239.33	MW
	08/11/03	34.18	278.38	244.20	MW
	06/02/03	Not located [3]	278.38	--	MW
	03/10/03	30.66	278.38	247.72	MW
	12/02/02	38.88	278.38	239.50	MW
	08/26/02	36.20	278.38	242.18	MW
	05/28/02	31.37	278.38	247.01	MW
	03/04/02	30.15	278.38	248.23	MW
	11/26/01	40.46	278.38	237.92	MW
	08/27/01	Not located [3]	278.38	--	MW
	05/17/01	37.07 [4]	278.38	241.31	MW
NKGW02	03/08/04	12.25	312.00	299.75	MW
	12/01/03	20.07	312.00	291.93	MW
	08/11/03	17.73	312.00	294.27	MW
	06/02/03	16.20	312.00	295.80	MW
	03/10/03	14.58	312.00	297.42	MW
	12/02/02	Dry	312.00	291.5 [2]	MW
	08/26/02	19.07	312.00	292.93	MW
	05/28/02	16.34	312.00	295.66	MW
	03/04/02	13.11	312.00	298.89	MW
	11/26/01	20.06	312.00	291.94	MW
	08/27/01	Dry	312.00	291.5 [2]	MW
	05/08/01	16.51	312.00	295.49	MW
NKGW03	03/08/04	13.21	334.60	321.39	MW
	12/01/03	14.65	334.60	319.95	MW
	08/11/03	14.60	334.60	320.00	MW
	06/02/03	14.55	334.60	320.05	MW
	03/10/03	14.53	334.60	320.07	MW
	12/02/02	14.50	334.60	320.10	MW
	08/26/02	14.47	334.60	320.13	MW
	05/28/02	14.47	334.60	320.13	MW
	03/04/02	13.58	334.60	321.02	MW
	11/26/01	Dry	334.60	320.7 [2]	MW
	08/27/01	Dry	334.60	320.7 [2]	MW
	05/08/01	14.53	334.60	320.07	MW
NKGW04	03/08/04	6.55	299.60	293.05	MW
	12/01/03	Not Located [3]	299.60	--	MW
	08/11/03	Not located [3]	299.60	--	MW
	06/02/03	Not located [3]	299.60	--	MW
	03/10/03	7.52	299.60	292.08	MW
	12/02/02	10.59	299.60	289.01	MW

Table 4
Groundwater Elevation Summary
Nike Missile Facility
Presidio of San Francisco, California

Well ID	Date	Average Depth to Water [1] (feet)	Top of Casing Elevation (feet PLLW)	Groundwater Elevation (feet PLLW)	Well Type
NKGW04	08/26/02	9.90	299.60	289.70	MW
	05/28/02	7.90	299.60	291.70	MW
	03/04/02	8.81	299.60	290.79	MW
	11/26/01	12.34	299.60	287.26	MW
	08/27/01	11.88	299.60	287.72	MW
	05/08/01	11.10	299.60	288.50	MW
NKGW05	03/08/04	22.80	284.20	261.40	MW
	12/01/03	27.50	284.20	256.70	MW
	08/11/03	Not located [3]	284.20	--	MW
	06/02/03	21.14	284.20	263.06	MW
	03/10/03	23.13	284.20	261.07	MW
	12/02/02	26.33	284.20	257.87	MW
	08/26/02	24.96	284.20	259.24	MW
	05/28/02	23.06	284.20	261.14	MW
	03/04/02	22.16	284.20	262.04	MW
	11/26/01	27.39	284.20	256.81	MW
	08/27/01	27.91	284.20	256.29	MW
	05/08/01	25.64	284.20	258.56	MW

Notes

1 - All depth to water measurements are an average of three measurements recorded in the field.
2 - Value represents the bottom of casing elevation in feet PLLW.
3 - Monitoring well was not located during the water level survey.
4 - NKGW01 was not located during the water level survey on 8 May 2001.
The groundwater elevation was measured on 17 May 2001.
MW - Monitoring well
feet PLLW - feet above Presidio lower low water vertical datum

Table 5
Results of Emergent Chemical Analyses
First Quarter 2004
Presidio of San Francsico, California

Well Name	**Sample Date**	**1,4-Dioxane**	**NDMA**	**Perchlorate**	**PDBE**						
					2,2',3,4,4',5'-HxBDE	**2,2',3,4,4'-PeBDE**	**2,2',4,4',5,5'-HxBDE**	**2,2',4,4',5',6-HxBDE**	**2,2',4,4',5-PeBDE**	**2,2',4,4',6-PeBDE**	**2,2',4,4'-TeBDE**
	Analytical Method	**SW8270**	**E1625**	**E314.0**	**EPA 1614**	**EPA 1614**	**EPA 1614**	**EPA 1614**	**EPA 1614**	**EPA 1614**	**EPA 1614**
		(µg/L)	(µg/L)	(µg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)	(pg/L)
CDHS Action Level	--	2.0	0.01	4.0	NE	NE	NE	NE	NE	NE	NE
Tap Water PRG	--	6.1	0.0013	3.6	NE	NE	NE	NE	NE	NE	NE
Building 900s Area											
937GW102	03/16/04	< 0.95	NA	NA	NA	NA	NA	NA	NA	NA	NA
979GW111R	03/12/04	< 0.95	NA	NA	NA	NA	NA	NA	NA	NA	NA
979GW112	03/12/04	< 0.98	NA	NA	NA	NA	NA	NA	NA	NA	NA
DUP0312041A	03/12/04	< 0.97	NA	NA	NA	NA	NA	NA	NA	NA	NA
Landfill E											
DAEGW03	03/11/04	NA	NA	< 4	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
DUP0311043A	03/11/04	NA	NA	< 4	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
DAEGW05	03/11/04	NA	NA	< 4	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
DAEGW08	03/17/04	NA	NA	< 4	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000
Nike Missile Facility											
NKGW01	03/17/04	NA	**0.0048**	< 4	NA	NA	NA	NA	NA	NA	NA
DUP0317042A	03/17/04	NA	**0.0016 J**	< 4	NA	NA	NA	NA	NA	NA	NA
NKGW02	03/17/04	NA	< 0.002	< 4	NA	NA	NA	NA	NA	NA	NA
NKGW03	03/17/04	NA	< 0.002	< 4	NA	NA	NA	NA	NA	NA	NA
NKGW04	03/17/04	NA	**0.0025**	< 4	NA	NA	NA	NA	NA	NA	NA
NKGW05	03/17/04	NA	0.0009 J	< 4	NA	NA	NA	NA	NA	NA	NA
Lobos Creek Water Treatment Facility											
LCWT	03/18/04	NA	< 0.002	NA	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000	< 1,000

Notes:

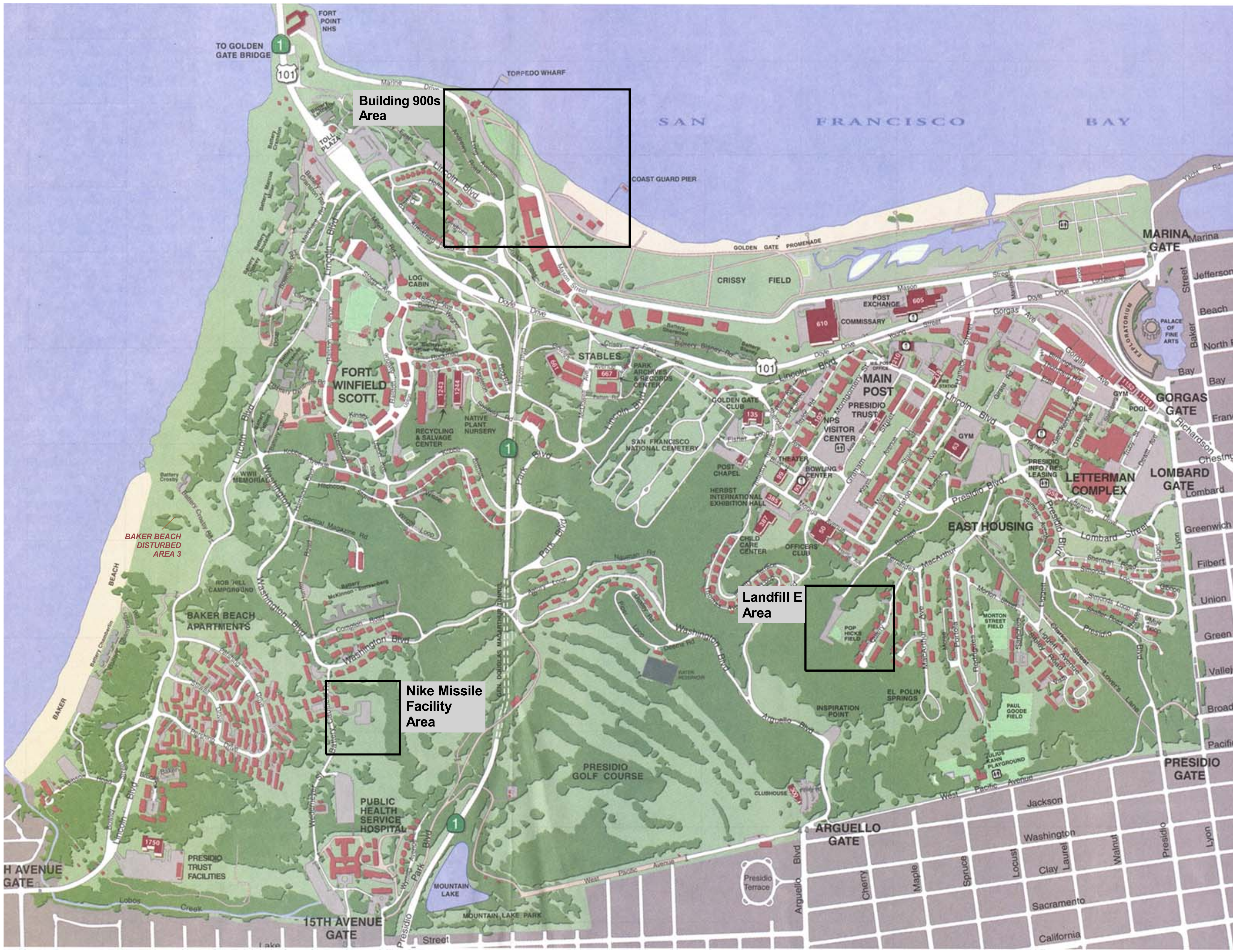
Concentrations in bold exceed applicable CDHS action levels and/or Tap Water PRGs.

The following duplicate samples were collected as part of this sampling program.

DUP0312041A was collected from monitoring well 979GW112.
DUP0311043A was collected from monitoring well DAEGW03.
DUP0317042A was collected from monitoring well NKGW01.

NDMA - N-nitrodimethylamine
PDBE - Polybrominated diphenyl ethers
HxBDE - Hexabromodiphenyl ether
PeBDE - Pentabromodiphenyl ether
TeBDE - Tetrabromodiphenyl ether
CDHS - California Department of Health Services
Tap Water PRG - EPA's Region 9 Tap Water Preliminary Remediation Goal
µg/L - micrograms per liter
pg/L - picograms per liter (1,000 pg/L equals 0.001 µg/L)
EPA - Environmental Protection Agency
NE - Not established
NA - Not analyzed

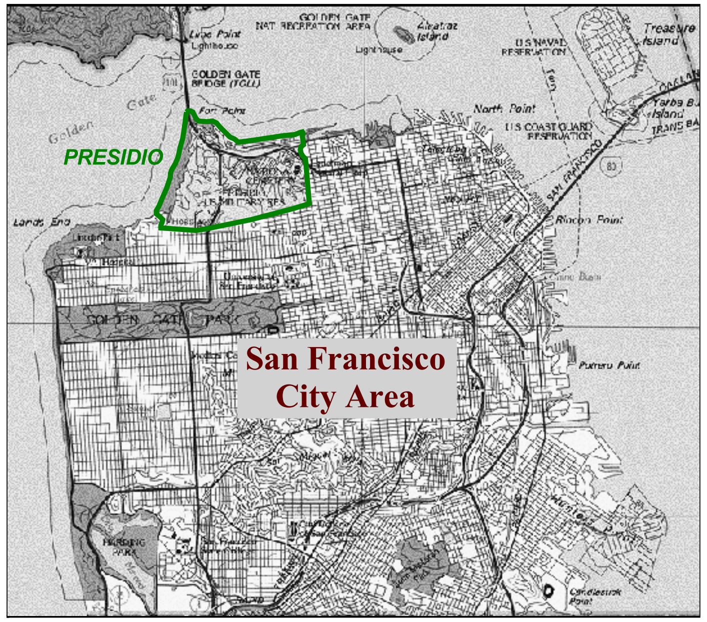
FIGURES



DRAFT

LEGEND

Area Depicted on Site Figures



SITE LOCATION MAP

Treadwell&Rollo

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Presidio Trust
34 Graham Street
P.O. Box 29052
San Francisco, CA
94129-0052
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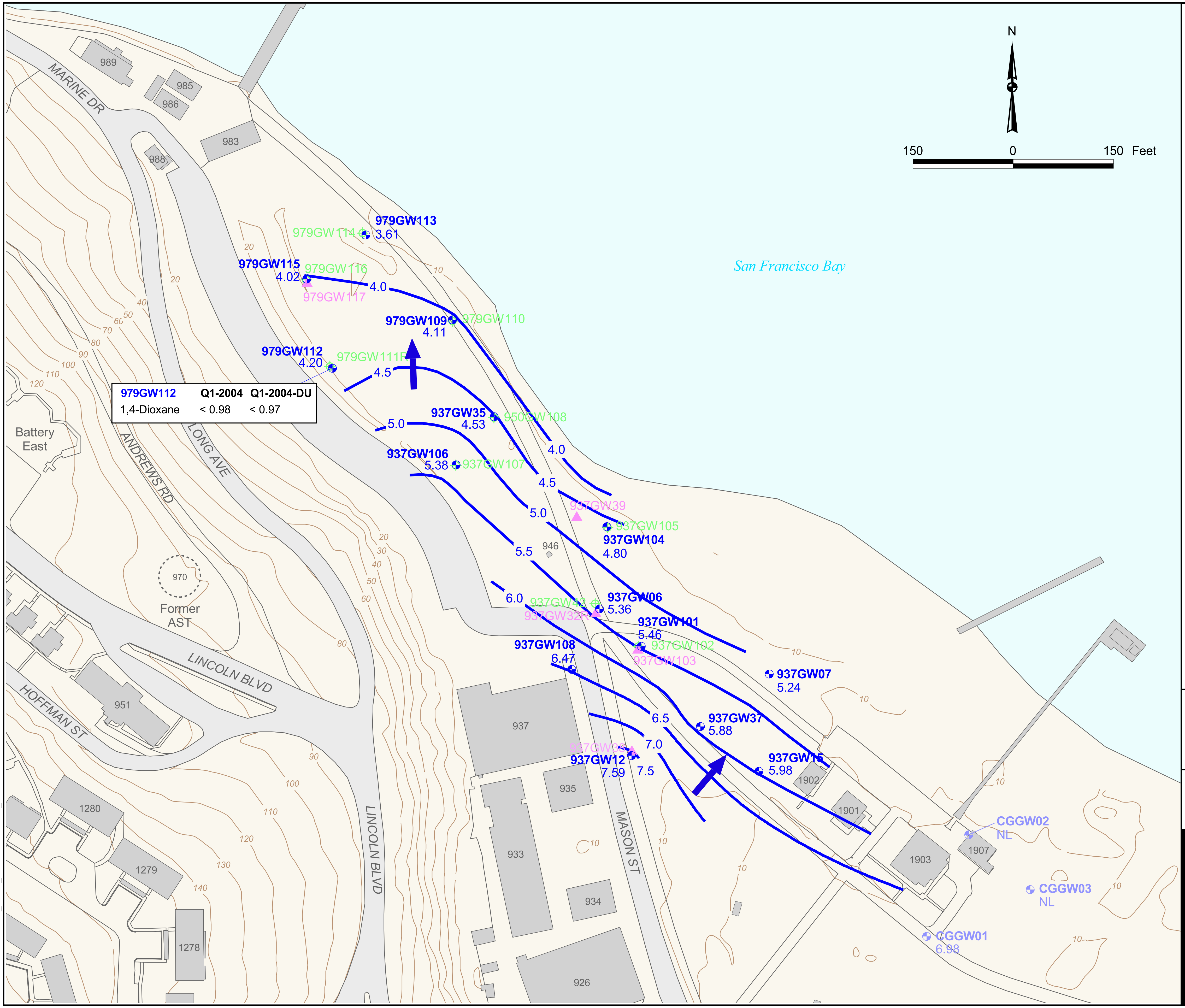
fax 415/561-5315
September 2004

FIGURE 1

Treadwell & Rollo 2893_04\Q1_2004\EMERGENT_CHEMICAL.APR 09/2004



979GW112	Q1-2004	Q1-2004-DU
1,4-Dioxane	< 0.98	< 0.97

LEGEND

● **937GW06** 5.36	Shallow Groundwater Monitoring Well March 2004 Groundwater Elevation
● CGGW01 6.98	Adjacent Study Area Shallow Groundwater Well March 2004 Groundwater Elevation
⊕ 937GW42	Intermediate Groundwater Monitoring Well
▲ 937GW103	Deep Groundwater Monitoring Well
NL	Not Located
←	Approximate Direction of Groundwater Flow
—	Groundwater Contour (Contour Interval : 0.5 ft)
—	Topographic Contour (Contour Interval : 10 ft)
935	Building and Number

Notes:
All results in ug/L - micrograms per liter.

Groundwater elevation data collected 8 March 2004.

Monitoring wells in BOLD were used in groundwater contouring.

Shallow Building 900s and Coast Guard Monitoring wells CGGW01 and CGGW02 were used in groundwater contouring.

Elevation of well 937GW07 is approximate due to damage to top of casing.

Horizontal Datum: NAD 27, CA State Plane Coordinates, Zone 3, feet
Vertical Datums: (groundwater) Presidio Lower Low Water (ft. PLLW)
(topography) North American Vertical Datum, NAVD88

BUILDING 900s AREA
8 MARCH 2004
GROUNDWATER ELEVATION MAP
SHALLOW ZONE AND ANALYTICAL RESULTS

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PRESIDIO TRUST

Presidio Trust
34 Graham Street
P.O. Box 29052
San Francisco, CA
94129-0052
415/561-5300
fax 415/561-5315
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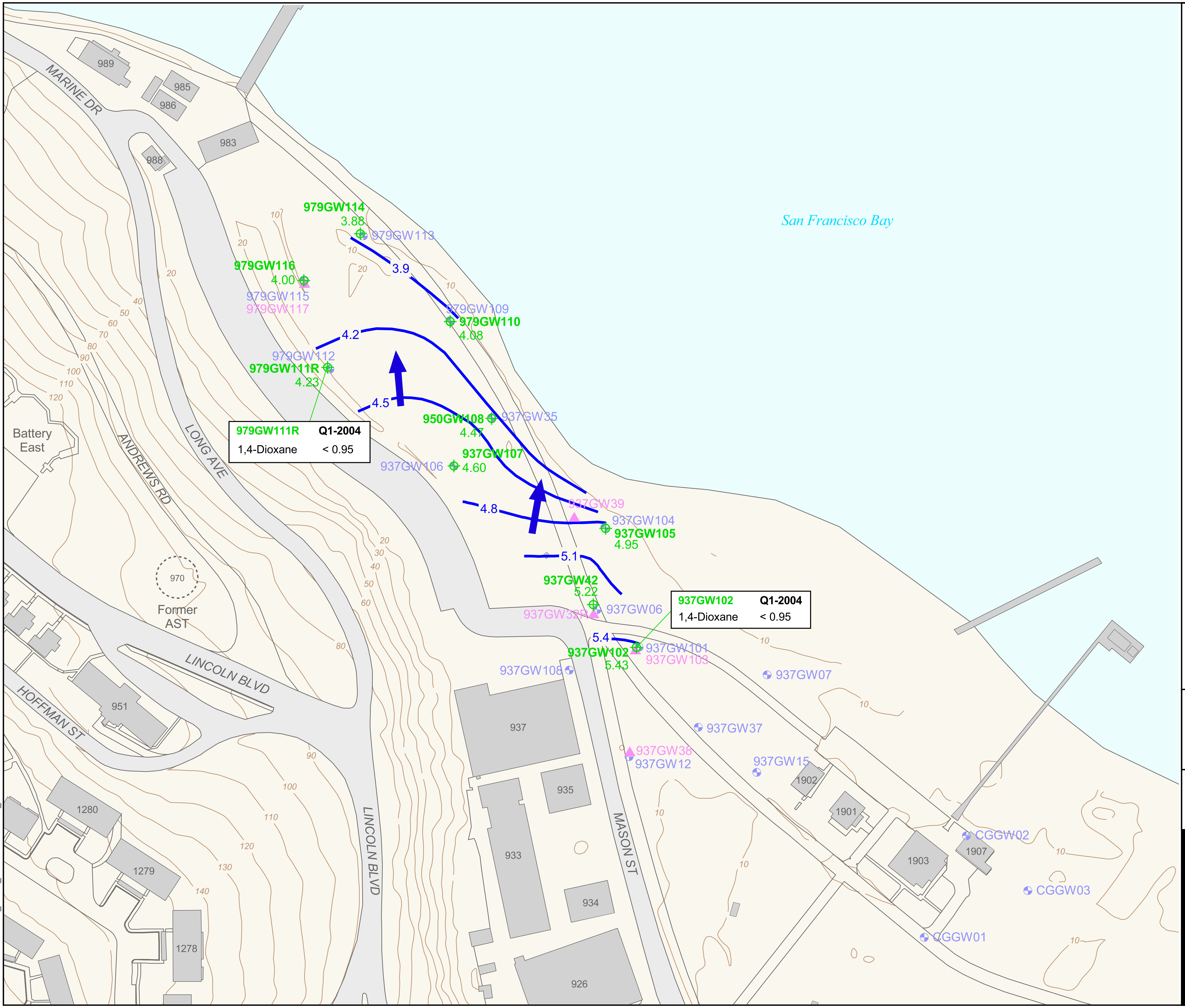
FIGURE 2

Treadwell & Rollo 2893_04\Q1_2004\EMERGENT_CHEMICAL.APR 09/2004



979GW111R	Q1-2004
1,4-Dioxane	< 0.95

937GW102	Q1-2004
1,4-Dioxane	< 0.95

N

150 0 150 Feet

LEGEND

⊕ 937GW42 5.22	Intermediate Groundwater Monitoring Well March 2004 Groundwater Elevation
◍ 937GW06	Shallow Groundwater Monitoring Well
▲ 937GW103	Deep Groundwater Monitoring Well
↖	Approximate Direction of Groundwater Flow
―	Groundwater Contour (Contour Interval : 0.3 ft)
―	Topographic Contour (Contour Interval : 10 ft)
935	Building and Number

Notes:
All results in ug/L - micrograms per liter.

Groundwater elevation data collected 8 March 2004.

Monitoring wells in BOLD were used in groundwater contouring.

Horizontal Datum: NAD 27, CA State Plane Coordinates, Zone 3, feet
Vertical Datums: (groundwater) Presidio Lower Low Water (ft. PLLW)
(topography) North American Vertical Datum, NAVD88

BUILDING 900s AREA
8 MARCH 2004
GROUNDWATER ELEVATION MAP
INTERMEDIATE ZONE AND ANALYTICAL RESULTS

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Presidio Trust
34 Graham Street
P.O. Box 29052
San Francisco, CA
94129-0052
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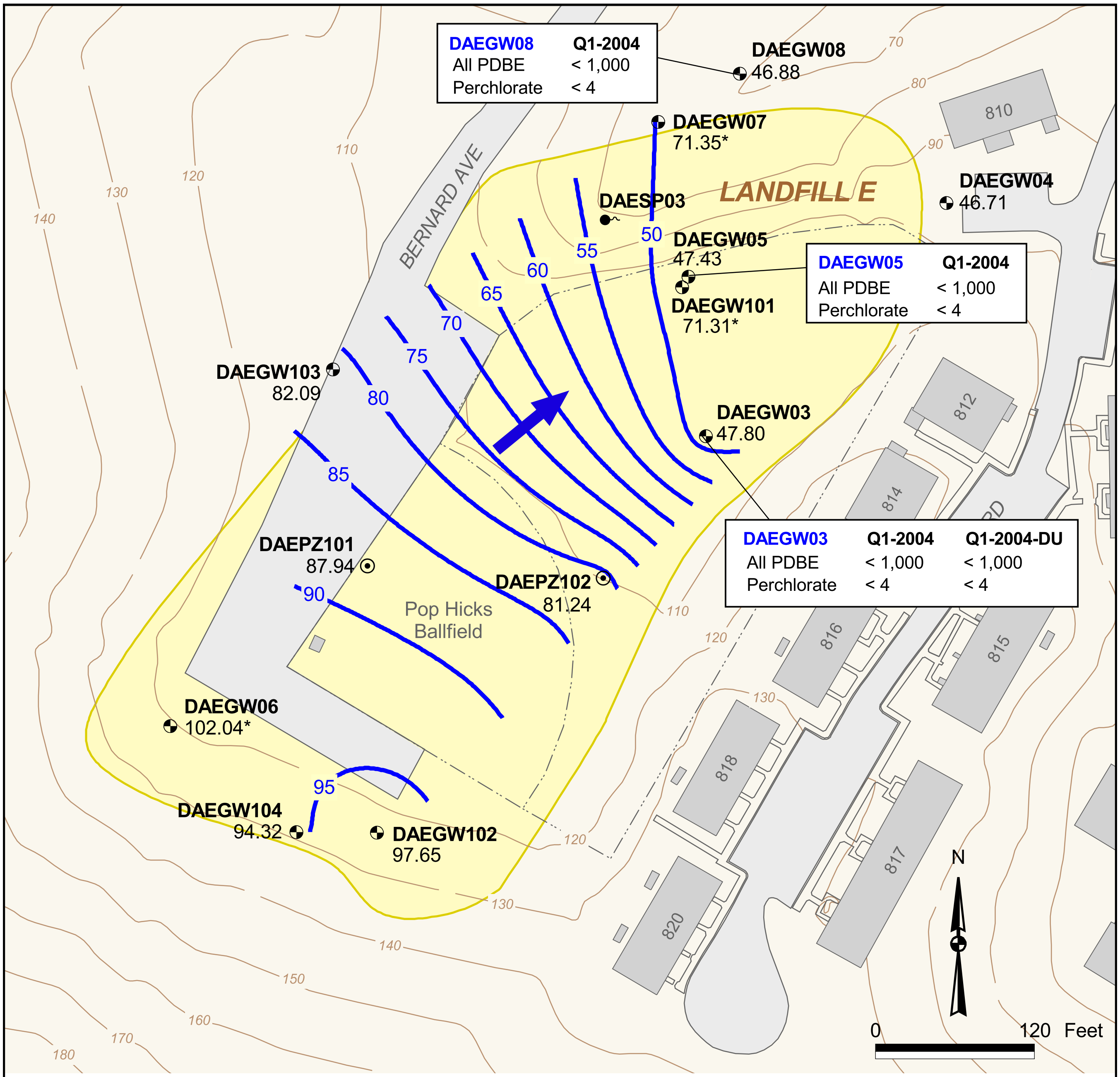
FIGURE 3

Treadwell & Rollo 2893_04\Q1_2004\EMERGENT_CHEMICAL.APR 09/2004



DAEGW08	Q1-2004
All PDBE	< 1,000
Perchlorate	< 4

DAEGW05	Q1-2004
All PDBE	< 1,000
Perchlorate	< 4

DAEGW03	Q1-2004	Q1-2004-DU
All PDBE	< 1,000	< 1,000
Perchlorate	< 4	< 4

LEGEND

↖	Approximate Direction of Groundwater Flow
—	Groundwater Elevation Contour (Contour Interval : 5 ft)
—	Topographic Contour (Contour Interval : 10 ft)
810	Building and Number
🟨	Approximate Lateral Extent of Landfill

◐ **DAEGW04** 46.71	Groundwater Monitoring Well March 2004 Groundwater Elevation
⊙ **DAEPZ101** 87.94	Piezometer, March 2004 Groundwater Elevation
●~ **DAESP03**	Approximate Surface Water Sample Location

* Wells DAEGW06 and DAEGW07 were not contoured, due to semi-confined and perched conditions, respectively. Whereas, well DAEGW101 was not contoured because it is screened in a deeper interval.

Notes:
Perchlorate results in ug/L - micrograms per liter.
PDBE results in pg/L - picograms per liter.

Groundwater elevation data collected on 8 March 2004.

Horizontal Datum: NAD 27, CA State Plane Coordinates, Zone 3, feet

Vertical Datums: (groundwater) Presidio Lower Low Water (ft. PLLW) (topography) North American Vertical Datum, NAVD88

LANDFILL E SITE PLAN AND 8 MARCH 2004 GROUNDWATER ELEVATION MAP AND ANALYTICAL RESULTS

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P.O. Box 29052
San Francisco, CA
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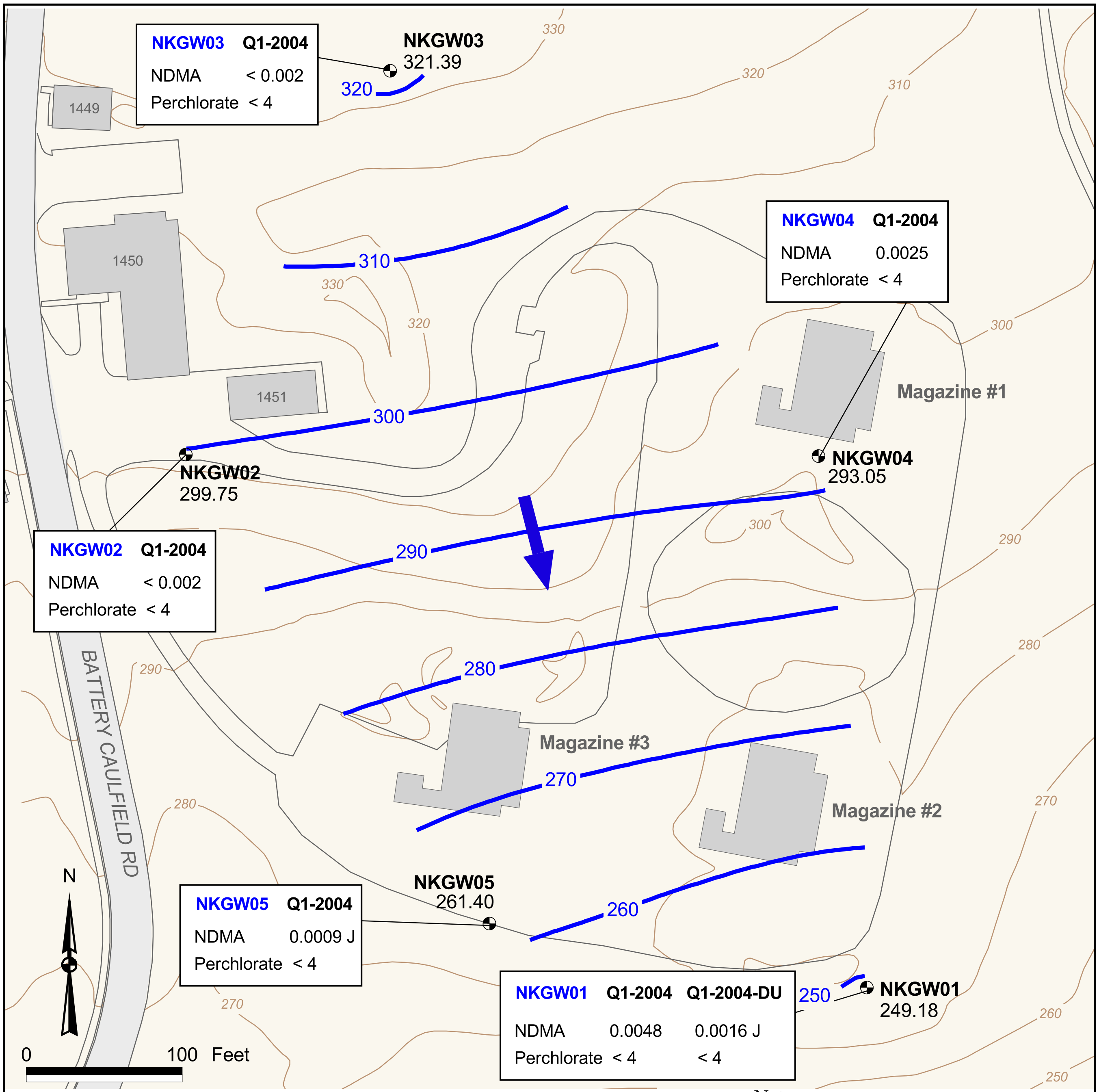
FIGURE 4

Treadwell & Rollo 2893_04\Q1_2004\EMERGENT_CHEMICAL.APR 09/2004



NKGW03	**Q1-2004**
NDMA	< 0.002
Perchlorate	< 4

NKGW04	**Q1-2004**
NDMA	0.0025
Perchlorate	< 4

NKGW02	**Q1-2004**
NDMA	< 0.002
Perchlorate	< 4

NKGW05	**Q1-2004**
NDMA	0.0009 J
Perchlorate	< 4

NKGW01	**Q1-2004**	**Q1-2004-DU**
NDMA	0.0048	0.0016 J
Perchlorate	< 4	< 4

LEGEND

⬋	Approximate Direction of Groundwater Flow	◐ **NKGW01** 249.18	Groundwater Monitoring Well March 2004 Groundwater Elevation
▬	Groundwater Contour (Contour Interval : 10 ft)	▨	Subsurface Nike Magazine
—	Topographic Contour (Contour Interval :10 ft)	1450	Building and Number

Notes:
All results in ug/L - micrograms per liter.

Groundwater elevation data collected 8 March 2004.

Horizontal Datum: NAD 27, CA State Plane Coordinates, Zone 3, feet

Vertical Datums: (groundwater) Presidio Lower Low Water (ft. PLLW) (topography) North American Vertical Datum, NAVD88

NIKE MISSILE FACILITY SITE PLAN AND 8 MARCH 2004 GROUNDWATER ELEVATION MAP AND ANALYTICAL RESULTS

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Presidio Trust
34 Graham Street
P.O. Box 29052
San Francisco, CA
94129-0052
415/561-5300
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FIGURE 5

Treadwell & Rollo 2893_04\Q1_2004\EMERGENT_CHEMICAL.APR 09/2004

ATTACHMENT A
Purge Records and Groundwater Level Measurement Logs

ATTACHMENT B
Data Validation Reports

ATTACHMENT C
Laboratory Analytical Reports